

Unit Conversion

Warm Up - solve for x

$$\frac{x}{4} = \frac{1}{7}$$

$$x = 4\left(\frac{1}{7}\right)$$

$$x = \frac{4}{7}$$

$$\frac{6}{x} = \frac{3}{4}$$

$$x = \frac{8}{3}$$

$$x = \frac{8}{3}(6)$$

$$x = 16$$

Now, let's take this to actual units...

If 1cm=10mm, how many mm are in 40cm?

Set it up as a ratio:

| | | |
|----|---|----|
| cm | | mm |
| 1 | = | 10 |
| 40 | | x |

turn this into 2 fractions and solve as a ratio

$$\frac{1}{40} = \frac{10}{x}$$

Flip them so x is on the top!!!

$$\frac{40}{1} = \frac{x}{10}$$

$$(10)\left(\frac{40}{1}\right) = x$$

$$400 = x$$

Let's do one more together...

If 1inch = 2.54cm, how many cm are in 62 inches?

| | | |
|------|--|------|
| inch | | cm |
| 1 | | 2.54 |
| 62 | | ? |

$$\frac{1}{62} = \frac{2.54}{x}$$

$$\frac{62}{1} = \frac{x}{2.54}$$

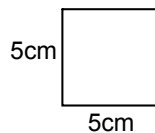
$$x = 2.54\left(\frac{62}{1}\right)$$

$$x = 157.5$$

∴ there are 157.5cm in 62 in.

Try: Worksheet

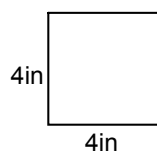
What happens when you are converting square units?



What is the area of this square?

What if we want to convert this area to m²?

Let's try another one....



Find the area in in² and cm²

Worksheet

a.)

| | | |
|----------|-----------|--|
| <u>m</u> | <u>cm</u> | |
| 1 | 100 | |
| 1.6 | x | |

$$\frac{1.6}{1} = \frac{x}{100} \quad \therefore 1.6 \text{ m} = 160 \text{ cm}$$

$$1.6(100) = x$$

$$160 = x$$

b.)

| | | |
|-----------|-----------|--|
| <u>ft</u> | <u>in</u> | |
| 1 | 12 | |
| 1.5 | x | |

$$\frac{1.5}{1} = \frac{x}{12} \quad \therefore 1.5 \text{ ft} = 18 \text{ in}$$

$$1.5(12) = x$$

$$18 = x$$

c.)

| | | |
|-----------|----------|--|
| <u>km</u> | <u>m</u> | |
| 1 | 1000 | |
| 3.4 | x | |

$$\frac{3.4}{1} = \frac{x}{1000} \quad \therefore 3.4 \text{ km} = 3400 \text{ m}$$

$$3.4(1000) = x$$

$$3400 = x$$